

General

Title

End stage renal disease (ESRD): percentage of ESRD patients aged 6 months and older receiving hemodialysis and/or peritoneal dialysis during the time from October 1 (or when the influenza vaccine became available) to March 31 who: 1) receive an influenza vaccination, or 2) were assessed and offered an influenza vaccination but decline, or 3) were assessed and determined to have a medical contraindication(s) to the influenza vaccination.

Source(s)

Kidney Care Quality Alliance (KCQA). KCQA NQF-endorsed performance measure technical specifications. Washington (DC): Kidney Care Quality Alliance (KCQA); 2015 May 19. 1 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of end stage renal disease (ESRD) patients aged 6 months and older receiving hemodialysis and/or peritoneal dialysis during the time from October 1 (or when the influenza vaccine became available) to March 31 who:

- Receive an influenza vaccination (computed and reported separately); or
- Were assessed and offered an influenza vaccination but decline (computed and reported separately); or
- Were assessed and determined to have a medical contraindication(s) to the influenza vaccination (computed and reported separately).

Rationale

The measure will promote adherence to existing clinical practice guidelines on influenza immunization in the end-stage renal disease (ESRD) population and will consequently reduce patient complication, hospitalization, and mortality rates.

As noted in the most recent guidelines released by the Center for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP), routine annual influenza vaccination is recommended for all persons aged 6 months and older, and is particularly important for individuals at increased risk for severe complications from influenza—including patients with ESRD (Grohskopf et al., 2014; Committee on Infectious Diseases & AAP, 2014). The body of evidence upon which these guidelines and this measure are based indicate that infectious disease is the second leading cause of death among ESRD patients and that pulmonary infectious mortality is tenfold higher in the ESRD population than in the general population (Gilbertson et al., 2003; Sarnak & Jaber, 2001; Thompson et al., 2004; Poehling et al., 2006; Izurieta et al., 2000). Especially among the young (Poehling et al., 2006; Izurieta et al., 2000), the aged (Gross et al., 1995; Nichol et al., 1999; Nichol et al., 1994; Nichol et al., 1998; Foster et al., 1992), and those with increased comorbidity (Nichol et al., 1999; Nichol et al., 1994; Nichol et al., 1998; Foster et al., 1992), influenza vaccination has been demonstrated to be a safe and efficacious means of decreasing the likelihood of hospitalization and mortality and reduces healthcare costs (Nichol et al., 1999; Nichol et al., 1994; Nichol et al., 1998; Foster et al., 1992; Arguedas, Solet, & Lindert, 2010; Plennevaux et al., 2010; Scharpé et al., 2008; Edvardsson et al., 1996). A goal of the "Healthy People 2010" program was to immunize 90% of the elderly and other high-risk individuals against influenza (U.S. Department of Health and Human Services [DHHS], 2000; "Influenza and pneumococcal," 2001). Yet despite this and well-established recommendations for annual vaccination in patients with ESRD ("Prevention and control," 1998), less than 66 percent of all ESRD patients received the influenza vaccination in 2010 (U.S. Renal Dialysis System [USRDS], 2015). The pediatric ESRD population vaccination rate remains very low, with only approximately 37% of all ESRD patients under the age of 19 receiving the vaccine in 2010 (USRDS, 2015). Note: The goal for influenza immunization of the elderly and other high-risk individuals for "Healthy People 2020" is unchanged from the 2010 goal at 90% (DHHS, 2010).

These findings strongly support existing clinical practice guidelines and the underlying construct of the Kidney Care Quality Alliance (KCQA) Influenza Immunization Measure—i.e., to reduce the frequency of infectious complications and improve patient survival, all ESRD patients should be immunized annually against influenza, absent a documented medical contraindication.

Evidence for Rationale

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Committee On Infectious Diseases, American Academy Pediatrics. Recommendations for prevention and control of influenza in children, 2014-2015. *Pediatrics*. 2014 Nov;134(5):e1503-19. [PubMed](#)

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Gilbertson DT, Unruh M, McBean AM, Kausz AT, Snyder JJ, Collins AJ. Influenza vaccine delivery and effectiveness in end-stage renal disease. *Kidney Int*. 2003 Feb;63(2):738-43. [PubMed](#)

Grohskopf LA, Olsen SJ, Sokolow LZ, Bresee JS, Cox NJ, Broder KR, Karron RA, Walter EB, Centers for Disease Control and Prevention. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP) -- United States, 2014-15 influenza season. MMWR Morb Mortal Wkly Rep. 2014 Aug 15;63(32):691-7. [PubMed](#)

Gross PA, Hermogenes AW, Sacks HS, Lau J, Levandowski RA. The efficacy of influenza vaccine in elderly persons. A meta-analysis and review of the literature. Ann Intern Med. 1995 Oct 1;123(7):518-27. [PubMed](#)

Influenza and pneumococcal vaccination levels among persons aged > or = 65 years--United States, 1999. MMWR Morb Mortal Wkly Rep. 2001 Jun 29;50(25):532-7. [PubMed](#)

Izurieta HS, Thompson WW, Kramarz P, Shay DK, Davis RL, DeStefano F, Black S, Shinefield H, Fukuda K. Influenza and the rates of hospitalization for respiratory disease among infants and young children. N Engl J Med. 2000 Jan 27;342(4):232-9. [PubMed](#)

Nichol KL, Baken L, Nelson A. Relation between influenza vaccination and outpatient visits, hospitalization, and mortality in elderly persons with chronic lung disease. Ann Intern Med. 1999 Mar 2;130(5):397-403. [PubMed](#)

Nichol KL, Margolis KL, Wuorenma J, Von Sternberg T. The efficacy and cost effectiveness of vaccination against influenza among elderly persons living in the community. N Engl J Med. 1994 Sep 22;331(12):778-84. [PubMed](#)

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Poehling KA, Edwards KM, Weinberg GA, Szilagyi P, Staat MA, Iwane MK, Bridges CB, Grijalva CG, Zhu Y, Bernstein DI, Herrera G, Erdman D, Hall CB, Seither R, Griffin MR, New Vaccine Surveillance Network. The underrecognized burden of influenza in young children. N Engl J Med. 2006 Jul 6;355(1):31-40. [PubMed](#)

Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). Centers for Disease Control and Prevention. MMWR Recomm Rep: Morb Mortal Wkly Rep. 1998 May 1;47(RR-6):1-26. [PubMed](#)

Sarnak MJ, Jaber BL. Pulmonary infectious mortality among patients with end-stage renal disease. Chest. 2001 Dec;120(6):1883-7. [PubMed](#)

Scharp J, Evenepoel P, Maes B, Bammens B, Claes K, Osterhaus AD, Vanrenterghem Y, Peetermans WE. Influenza vaccination is efficacious and safe in renal transplant recipients. Am J Transplant. 2008 Feb;8(2):332-7. [PubMed](#)

Thompson WW, Shay DK, Weintraub E, Brammer L, Bridges CB, Cox NJ, Fukuda K. Influenza-associated hospitalizations in the United States. JAMA. 2004 Sep 15;292(11):1333-40. [PubMed](#)

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Primary Health Components

End stage renal disease (ESRD); hemodialysis; peritoneal dialysis; influenza vaccination

Denominator Description

All end stage renal disease (ESRD) patients aged 6 months and older receiving hemodialysis and/or peritoneal dialysis during the time from October 1 (or when the influenza vaccine became available) to March 31

Numerator Description

Number of patients from the denominator who:

Received an influenza vaccination (documented by the provider or reported receipt from another provider by the patient); or
Were assessed and offered an influenza vaccination but declined; or
Were assessed and determined to have a medical contraindication(s) of anaphylactic hypersensitivity to eggs or other component(s) of the vaccine, history of Guillain-Barré syndrome within 6 weeks after a previous influenza vaccination, bone marrow transplant within the past 6 months (less than 6 months prior to encounters between October 1 and March 31)

See the related "Numerator Inclusions/Exclusions" field.

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Testing Protocol

The Kidney Care Quality Alliance (KCQA) undertook testing of its end stage renal disease (ESRD) measures through a prospective cohort study at a nationally drawn sample of 53 dialysis facilities

containing a mix of for-profit and not-for-profit providers; hospital-affiliated and freestanding facilities within large, small, and independent dialysis organizations; urban, suburban, and rural settings; and facilities both with and without electronic health records (EHRs). Approximately 25 patients per facility were sought, resulting in a final sample size of 1,115 patients. Both facility and patient samples were structured to be generally representative of the national industry profile as identified by the United States Renal Data Systems (USRDS) 2007 Annual Data Report. Facility records were used as the data source, and standardized, paper-based data collection sheets constructed from the endorsed specifications were employed during data collection (see the "Companion Documents" field for the data collection form).

Following the year-long data collection period, on-site data-integrity audits were performed at 11 of the 53 facilities (21%). Audit sites were selected to provide a cross-section of facilities reflective of the sample profile. Selection criteria included geographic location, facility type (e.g., for-profit vs. not-for-profit, urban vs. rural), and EHR use. Pertinent data were reabstracted from the patients' medical records and were compared to the information submitted by the facility throughout the pilot to assess the measure's reliability.

Influenza Immunization Testing Results

Performance: Influenza vaccination data were provided for 1,104 of the 1,115 patients (99.0%) in the study sample. The performance rate for the measure was calculated as follows:

Performance rate =

$$\frac{\# \text{ Pts Vaccinated} + \# \text{ Pts Who Decline Vaccine} + \# \text{ Pts with Medical Contraindication}}{\text{ESRD Pts Aged 18 Years and Older}} \\ = (958 + 120 + 5) / 1,115 = 97.1\%$$

Reliability: Inter-rater reliability was assessed during the on-site data integrity audits through a direct comparison of data submitted by the facilities throughout the pilot to data reabstracted by the auditor(s), and was quantitatively summarized using Cohen's Kappa with confidence intervals. The resulting Kappa statistic was found to be 0.6568 with a confidence interval of 0.5210 to 0.7926. Based on the literature, this value indicates "substantial" agreement and excellent reproducibility for the measure. In addition to the Kappa value, the percent agreement between the auditor and facility abstractors (i.e., the reliability percentage) was calculated and was found to be excellent at 98.1%. These two values demonstrate that the KCQA Influenza Immunization measure is reliable.

*Despite the high overall performance rate, performance for each individual facility ranged from 78% to 100%, demonstrating a performance gap.

Evidence for Extent of Measure Testing

Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics*. 1977 Mar;33(1):159-74. [PubMed](#)

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 6 months

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

2017 Care Area

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

October 1 (or when the influenza vaccine became available) to March 31

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

All end stage renal disease (ESRD) patients aged 6 months and older receiving hemodialysis and/or peritoneal dialysis during the time from October 1 (or when the influenza vaccine became available) to March 31

Exclusions

None

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Number of patients from the denominator who:

Received an influenza vaccination (documented by the provider or reported receipt from another provider by the patient); or
Were assessed and offered an influenza vaccination but declined; or
Were assessed and determined to have a medical contraindication(s) of anaphylactic hypersensitivity to eggs or other component(s) of the vaccine, history of Guillain-Barré syndrome within 6 weeks after a previous influenza vaccination, bone marrow transplant within the past 6 months (less than 6 months prior to encounters between October 1 and March 31)

Note: Only inactivated virus should be used in the end stage renal disease (ESRD) population.

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Paper medical record

Provider characteristics

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

NQF 0226: Influenza immunization in the ESRD population.

Measure Collection Name

End Stage Renal Disease (ESRD) Performance Measures

Submitter

Kidney Care Quality Alliance - Clinical Specialty Collaboration

Developer

Kidney Care Quality Alliance - Clinical Specialty Collaboration

Funding Source(s)

Kidney Care Partners

Composition of the Group that Developed the Measure

Kidney Care Quality Alliance Steering Committee Members:

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Gail S. Wick, BSN, RN, CNN (*Co-Chair*)—American Nephrology Nurses Association

Dolph Chianchiano, JD—National Kidney Foundation

Richard S. Goldman, MD—Renal Physicians Association

Barbara Fivush, MD—American Society of Pediatric Nephrology

Maureen Michael, BSN, MBA—National Renal Administrators Association

Allen Nissenson, MD—DaVita

Barry M. Straube, MD—Centers for Medicare and Medicaid Services (Liaison Member)

Financial Disclosures/Other Potential Conflicts of Interest

None

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2014 Feb 25

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 May

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: Kidney Care Quality Alliance. KCQA performance measures: detailed technical specifications. Washington (DC): Kidney Care Quality Alliance (KCQA); 2010 Jan. 6 p.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source not available electronically.

For more information, contact Kidney Care Partners at 2550 M Street, NW, Washington, DC 20037; Phone: 703-830-9192; Web site: www.kidneycarepartners.com .

NQMC Status

This NQMC summary was completed by ECRI Institute on December 7, 2010. The information was verified by the measure developer on February 1, 2011.

This NQMC summary was retrofitted into the new template on June 13, 2011.

This NQMC summary was updated by ECRI Institute on June 10, 2015. The information was verified by the measure developer on July 13, 2015.

The information was reaffirmed by the measure developer on April 7, 2016.

Copyright Statement

Full measure specifications for the individual measure, "Influenza Immunization in the ESRD Population," are available from the Kidney Care Partners Web Site (www.kidneycarepartners.com). Check the Kidney Care Partners Web Site regularly for the most recent version of the specifications.

Production

Source(s)

Kidney Care Quality Alliance (KCQA). KCQA NQF-endorsed performance measure technical specifications. Washington (DC): Kidney Care Quality Alliance (KCQA); 2015 May 19. 1 p.

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